AMENDMENTS TO THE CLAIMS

1. (previously amended) A gene delivery system for $CD40^+$ immune cells, comprising:

(a) a recombinant adenovirus; and

(b) a component recognizing CD40 antigen comprising a first antibody, or antigen-binding fragment thereof, that binds to a fiber-knob protein of said adenovirus, wherein said first antibody or antigen-binding fragment thereof is conjugated to a second antibody, or antigen-binding fragment thereof, that binds to CD40 antigen.

2. (canceled)

3. (previously amended) The gene delivery system of claim 1, wherein said first antibody and second antibody are genetically fused together.

4. (currently amended) The gene delivery system of claim 1, wherein said second antibody that binds to ~~directed against~~ CD40

antigen is secreted from hybridoma selected from the group consisting of G28.5 (ATCC #9110-HB) and FGK45.

5. (previously amended) The gene delivery system of claim 1, wherein said gene delivery system mediates an effect selected from the group consisting of transduction of said $CD40^+$ immune cells, immunomodulation of said $CD40^+$ immune cells, and maturation of said $CD40^+$ immune cells.

6. (original) The gene delivery system of claim 1, wherein said system further comprises a therapeutic gene.

7. (original) The gene delivery system of claim 6, wherein said therapeutic gene is selected from the group consisting of a gene encoding a tumor antigen, a gene encoding an antigen for an infectious agent, a gene encoding an autoimmune antigen, an immunomodulatory gene and a gene encoding a cytotoxic agent.

8. (original) The gene delivery system of claim 7, wherein said tumor antigen is human papillomavirus type 16 E7 antigen.

9. (previously amended) The gene delivery system of claim 1, wherein said $CD40^+$ immune cells are selected from the group consisting of dendritic cells and B cells.

10. (original) The gene delivery of claim 9, wherein said dendritic cells are selected from the group consisting of monocyte-derived dendritic cells, bone marrow-derived dendritic cells and cutaneous dendritic cells.

11. (currently amended) A method for genetically manipulating $CD40^+$ immune cells, comprising the step of:

administering the gene delivery system of claim 1 to said $\underline{CD40^+}$ immune cells, wherein said gene delivery system mediates gene transduction and causes maturation of said $\underline{CD40^+}$ immune cells.

12. (currently amended) The method of claim 11, wherein said $\underline{CD40^+ \text{ immune}}$ cells are obtained from individual who has a disease selected from the group consisting of cancer, an infectious disease, allotransplant rejection, xenotransplant rejection and an autoimmune disease.

13. (original) The method of claim 11, wherein said administration of the gene delivery system is selected from the group consisting of systemic administration, intradermal administration and *ex vivo* administration.

14. (currently amended) A method for genetically manipulating $CD40^+$ immune cells, comprising the step of:

administering the gene delivery system of claim 6 to said $\underline{CD40^+}$ immune cells, wherein said gene delivery system mediates gene transduction and causes maturation of said $\underline{CD40^+}$ immune cells.

15. (currently amended) The method of claim 14, wherein said $\underline{CD40^+ \text{ immune}}$ cells are obtained from individual who has a disease selected from the group consisting of cancer, an infectious disease, allotransplant rejection, xenotransplant rejection and an autoimmune disease.

16. (original) The method of claim 14, wherein said administration of the gene delivery system is selected from the

group consisting of systemic administration, intradermal administration and *ex vivo* administration.

17. (previously amended) A method for enhancing the vaccination potential of dendritic cells, comprising the step of:

administering the gene delivery system of claim 1 to said dendritic cells, wherein said gene delivery system mediates gene transduction and increases the vaccination potential of said dendritic cells.

18. (canceled)

19. (currently amended) The method of claim 17, wherein said dendritic cells are obtained from individual who has a disease selected from the group consisting of cancer, an infectious disease, allotransplant rejection, xenotransplant rejection and an autoimmune disease.

20. (original) The method of claim 17, wherein said administration of the gene delivery system is selected from the

group consisting of systemic administration, intradermal administration and *ex vivo* administration.

21. (previously amended) A method for enhancing the vaccination potential of dendritic cells, comprising the step of:

administering the gene delivery system of claim 6 to said dendritic cells, wherein said gene delivery system mediates gene transduction and increases the vaccination potential of said dendritic cells.

22. (canceled)

23. (currently amended) The method of claim 21, wherein said dendritic cells are obtained from individual who has a disease selected from the group consisting of cancer, an infectious disease, allotransplant rejection, xenotransplant rejection and an autoimmune disease.

24. (original) The method of claim 21, wherein said administration of the gene delivery system is selected from the

group consisting of systemic administration, intradermal administration and *ex vivo* administration.

25. (original) The gene delivery system of claim 1, wherein said system is a recombinant adenoviral vector.

26. (original) The gene delivery system of claim 6, wherein said system is a recombinant adenoviral vector.

27. (original) The method of claim 11, wherein said gene delivery system is a recombinant adenoviral vector.

28. (original) The method of claim 14, wherein said gene delivery system is a recombinant adenoviral vector.

29. (original) The method of claim 17, wherein said gene delivery system is a recombinant adenoviral vector.

30. (original) The method of claim 21, wherein said gene delivery system is a recombinant adenoviral vector.

31. (previously amended) A recombinant adenoviral vector, comprising:

a genetically modified adenovirus having a fiber protein comprising CD40 ligand, wherein the fiber shaft of said fiber protein is replaced by bacteriophage T4 fibritin protein and said CD40 ligand targets said vector to CD40.

32-33. (canceled)

34. (previously amended) A gene delivery system for $CD40^+$ immune cells, comprising:

the recombinant adenoviral vector of claim 31.

35. (previously amended) The gene delivery system of claim 34, wherein said gene delivery system mediates an effect selected from the group consisting of transduction of said $CD40^+$ immune cells, immunomodulation of said $CD40^+$ immune cells, and maturation of said $CD40^+$ immune cells.

36. (previously amended) The gene delivery system of claim 34, wherein said $CD40^+$ immune cells are selected from the group consisting of dendritic cells and B cells.

37. (original) The gene delivery of claim 36, wherein said dendritic cells are selected from the group consisting of monocyte-derived dendritic cells, bone marrow-derived dendritic cells and cutaneous dendritic cells.

38. (original) The gene delivery system of claim 34, further comprising:

a tumor antigen expression cassette, wherein said cassette is inserted into the E1 region of the modified adenovirus.

39. (original) The gene delivery system of claim 38, wherein said tumor antigen is human papillomavirus type 16 E7 antigen.

40. (previously amended) A method for enhancing the vaccination potential of dendritic cells, comprising the step of:

administering the gene delivery system of claim 34 to said dendritic cells, wherein said gene delivery system mediates gene

transduction and increases the vaccination potential of said dendritic cells.

41. (currently amended) The method of claim 40, wherein said dendritic cells are obtained from individual who has a disease selected from the group consisting of cancer, an infectious disease, allotransplant rejection, xenotransplant rejection and an autoimmune disease.

42. (original) The method of claim 40, wherein said administration of the gene delivery system is selected from the group consisting of systemic administration, intradermal administration and *ex vivo* administration.

43. (previously amended) A method for enhancing the vaccination potential of dendritic cells, comprising the step of:

administering the gene delivery system of claim 38 to said dendritic cells, wherein said gene delivery system mediates gene transduction and increases the vaccination potential of said dendritic cells.

44. (currently amended) The method of claim 43, wherein said dendritic cells are obtained from individual who has a disease selected from the group consisting of cancer, an infectious disease, allotransplant rejection, xenotransplant rejection and an autoimmune disease.

45. (original) The method of claim 43, wherein said administration of the gene delivery system is selected from the group consisting of systemic administration, intradermal administration and *ex vivo* administration.

46. (previously amended) The recombinant adenoviral vector of claim 31, wherein said CD40 ligand comprises the globular domain of CD40 ligand.

47. (previously amended) A gene delivery system for $CD40^+$ immune cells, comprising:

the recombinant adenoviral vector of claim 46.

48. (previously amended) The gene delivery system of claim 47, wherein said gene delivery system mediates an effect selected

from the group consisting of transduction of said $CD40^+$ immune cells, immunomodulation of said $CD40^+$ immune cells, and maturation of said $CD40^+$ immune cells.

49. (previously amended) The gene delivery system of claim 47, wherein said $CD40^+$ immune cells are selected from the group consisting of dendritic cells and B cells.

50. (original) The gene delivery of claim 49, wherein said dendritic cells are selected from the group consisting of monocyte-derived dendritic cells, bone marrow-derived dendritic cells and cutaneous dendritic cells.

51. (original) The gene delivery system of claim 47, further comprising:

a tumor antigen expression cassette, wherein said cassette is inserted into the E1 region of the modified adenovirus.

52. (original) The gene delivery system of claim 51, wherein said tumor antigen is human papillomavirus type 16 E7 antigen.

53. (previously amended) A method for enhancing the vaccination potential of dendritic cells, comprising the step of:

administering the gene delivery system of claim 47 to said dendritic cells, wherein said gene delivery system mediates gene transduction and increases the vaccination potential of said dendritic cells.

54. (currently amended) The method of claim 53, wherein said dendritic cells are obtained from individual who has a disease selected from the group consisting of cancer, an infectious disease, allotransplant rejection, xenotransplant rejection and an autoimmune disease.

55. (previously amended) A method for enhancing the vaccination potential of dendritic cells, comprising the step of:

administering the gene delivery system of claim 51 to said dendritic cells, wherein said gene delivery system mediates gene transduction and increases the vaccination potential of said dendritic cells.

56. (currently amended) The method of claim 55, wherein said dendritic cells are obtained from individual who has a disease selected from the group consisting of cancer, an infectious disease, allotransplant rejection, xenotransplant rejection and an autoimmune disease.